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JUNE
1934

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..ASBESTOS..

A MONTHLY MARKET JOURNAL DEVOTED TO THE INTERESTS OF THE ASBESTOS AND MAGNESIA INDUSTRIES

A. S. ROSSITER, *EDITOR*

PUBLISHED BY SECRETARIAL SERVICE

16th FLOOR INQUIRER BUILDING

PHILADELPHIA, PENNSYLVANIA

C. J. STOVER, *OWNER*

Entered As Second Class Matter November 23, 1923, at the Post Office at Philadelphia, Pennsylvania, Under Act of March 3, 1879

Volume XV | JUNE 1934 | Number 12

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SUBSCRIPTION PRICE

U. S. AND MEXICO — $2.00 PER YEAR

FOREIGN COUNTRIES (INCLUDING CANADA) — 3.00 " "

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Asbestos In Use On Boulder Dam Project

By R. G. Skerrett

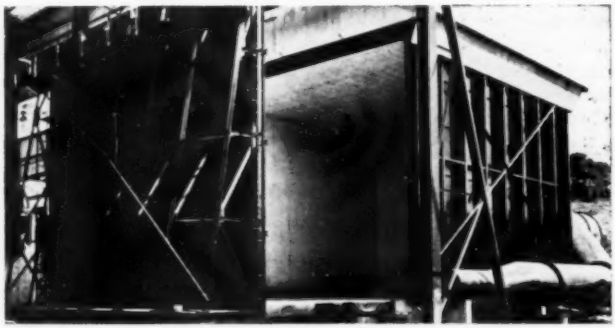
In reading in the daily news of large governmental or private projects, those of us interested in asbestos often wonder what part asbestos materials play in the successful completion of such gigantic constructions. Mr. Skerrett in the accompanying article tells us some of the ways in which Asbestos is doing its bit in the building of the great Boulder Dam.

Boulder Dam is rising so rapidly above the sub-bed of the Colorado River that water will be stored to a considerable extent during the current year. Some time in 1935 enough water will be impounded by this titanic bulkwark so that power can be generated by the great turbines that will be in place by that time. In short, progress to date is more than a year in advance of the schedule prescribed when the Six Companies, Inc., was awarded its contract.

As much as has been written and published about the Boulder Dam project, still it is doubtful if the general public comprehends the magnitude of the undertaking and the amazing work that has been done by the general contractor since operations were started in the first half of 1931. The dam is being reared in upper Black Canyon, which is a deep and narrow gorge that has been carved in the solid rock in the course of untold thousands of years. The walls of the canyon rise nearly sheer for the better part of a thousand feet from the normal level of the stream, and before anything could be done bearing directly upon the ultimate features of the dam, the contractor had to build a good many miles of roads and to construct approaches to the dam site both for motor trucks and an indispensable railway. Next, after opening up these avenues of approach, four enormous tunnels, 50 feet in diameter when heavily lined with concrete, had to be driven thru the canyon walls, on each side of the river for thousands of feet, so that the river, even in maximum flood stages, could be detoured in order

that the river bed could be laid bare at the dam site. Finally, two immense cofferdams had to be built above and below the dam site but within the upstream and the downstream limits of the diversion tunnel.

In the driving of the diversion tunnels, substantially 1,500,000 cubic yards of rock had to be excavated within the tunnels — not counting the rock drilled and blasted in clearing away the approaches. When the excavating was finished, the tunnels had to be lined with concrete not less than 3 feet thick; and the lining required the placing of about 300,000 cubic yards of concrete. In the



This furnace, at Bechtel, Nev. (at the Field Fabricating Plant of Babcock & Wilcox Co., for Boulder Dam) is lined with B&W Insulating Firebrick containing asbestos fibre. The lining reduces radiation and absorption losses and substantially lessens the amount of fuel oil required to operate the furnace.

excavating of the river bed, in the scaling of the canyon walls, and in the rearing of the two immense cofferdams, the contractor had to clear away and to deposit at prescribed points a total of 2,000,000 cubic yards of rock and gravel. Up to date, the excavating for the cavernous spillways has entailed the removal of 1,156,000 cubic yards of material — mostly rock; and the sites for the valve houses and the great intake towers have necessitated the drilling and blasting of 555,000 cubic yards of

rock. These figures do not include other excavating, totaling many thousands of cubic yards, done in other parts of the undertaking and essential to facilitate operations. At one stage or another, nearly all of this excavated material has been moved with the aid of hundreds of large capacity motor trucks; and power shovels, dragline excavators, and other motor-driven equipment have helped to clear away blasted rock and other materials either in essential clearing of areas or in placing the materials in forming roadways and fills or in the rearing of the two cofferdams. Incidentally, in many instances, thousands of cubic yards of concrete have been transported by motor trucks — the trucks at numerous points have been obliged to negotiate extremely steep gradients, some of the climbs and descents being in excess of twenty degrees. Asbestos brake linings on the trucks and asbestos friction bands on power shovels, dragline excavators, etc., have been indispensable. Safety has depended upon the proper working of brakes, and the efficient performance of excavating machinery has rested upon the satisfactory functioning of the friction bands. Inconspicuous as has been the service of asbestos in these fields still the part played by it has been a vital one.

Very considerable volumes of water in the form of seepage had to be disposed of during the driving of the diversion tunnels, in the draining of the dam site, and in distributing water to different points for essential purposes, also, water has to be delivered to the big concrete mixing plant, and water has to be raised from the depths of the canyon many hundreds of feet and placed in ample quantities at the disposal of Boulder City. All this water has its source in the muddy Colorado River, and the pumps that handle it have to be made tight against the abrasive action of the silt. Therefore, these multifarious pumps are fitted with asbestos packing, which stands up splendidly under the wear and tear to which it is exposed. For some uses, steam is necessary and in the steam plants the piping is insulated with asbestos coverings.

Unquestionably, most of the operating power in connection with the Boulder Dam Project is electrical, and

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temporary power plants using current from afar are housed in makeshift shacks or structures placed at essential sites. The corrugated siding and roofing used for these buildings are of asbestos composition. This is understandable when one recalls that the heat during the summertime, in the shade, climbs to 120 degrees Fahrenheit. Imagine what might be the temperature of sheet metal when exposed to the sunshine in that hot and arid section of the country. Because of the widespread use of electricity for lighting and for power in the innumerable departments of the work in hand, there are scores and scores of control switchboards and at these stations asbestos performs a protective function. Interesting as it would be, it is not possible at this moment to give in figures the amounts of asbestos products in use in the various ways mentioned. We shall have to be content with the broad statement that the quantity is a large one and that asbestos materials are employed because they best answer for the services to which they are put.

When the reservoir formed by Boulder Dam is filled to the crest of the two spillways, it will contain 35,500,000 acre-feet of water, and from that level down to the lowest designed limit of discharge, all water returned to the river below the dam will be released thru a system of enormous steel mains now being fabricated at Bechtel, Nevada, a little more than a mile to the west of the dam site. The largest of these extraordinary conduits will be 30 feet in diameter, the next will be 25 feet in diameter, and leading off from these headers there will be groups of penstocks 13 feet and 8½ feet, respectively, in diameter. The 13 foot diameter penstocks will carry motive water, to the impulse wheels of the great turbines in the two divisions of the power house, one on each side of the river; and the lesser penstocks will carry the water to groups of unusually large outlet valves which will permit the water that is not used for power purposes to return to the course of the river. These conduits are made up of steel plates ranging in thickness from ⅞ inch to 2¾ inches, which are being bent cold to their prescribed curvatures in the field fabricating plant of the contractor,

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The Babcock & Wilcox Company. All the plates are being bound together in pipe sections by means of electric-fusion welding and with facilities that have been developed to their present stage of perfection after six years of experimentation. Every inch of a total of 400,000 linear feet of welding will be X-rayed so that the contractor can make sure that all the welds measure up to the exacting specifications before the conduits are finally joined together in the various rock-driven tunnels that will house them. Nothing comparable with this stupendous job has heretofore been essayed, and these steel pipes will mark a great stride in engineering progress. The headers and penstocks will be called upon to operate under heads of water ranging from 420 feet up to 590 feet, and they must accordingly, be amply strong to meet the maximum of operating stresses.

After each pipe section has been formed in the shop the section is placed in a stress-relieving furnace where it is incidentally annealed before being subjected to a series of revealing tests. During this operation, the section is exposed to a temperature of 1,200 degrees Fahrenheit and then gradually cooled. Asbestos is used in the composition of the bricks that line this unusual furnace, and the insulation effectively reduces radiation losses and cuts down the amount of fuel oil used to generate the hot gases for the furnace. Asbestos is also employed to insulate the circulating fans that insure a continuous movement of the gases to and fro within the furnace — this movement maintains a uniform temperature thruout the inside of the furnace.

According to the Government specifications, the headers and the penstocks are to be coated inside and out with coal tar; and to make the coating better suited for the service expected of it the tar will have mixed with it a considerable percentage of asbestos fibre.

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Notes on Asbestos Research

(BEING DONE AT THE NATIONAL RESEARCH LABORATORIES, OTTAWA)

Reprinted from "Asbestos, 1933" published by Dominion Bureau of Statistics, Canada.

1. *Active Silica and Magnesium Salts from Serpentine Rock*—Patents have been obtained for a process of manufacturing active silica and salts of magnesium from serpentine rock obtained as waste or tailings from the milling of asbestos-bearing serpentine rock. The active silica has valuable absorptive properties which make it useful industrially and of the salts of magnesium which are obtained by this process the more important are magnesium sulphate or epsom salts and magnesium chloride.

2. *Asbestos Cements.* A comprehensive study of asbestos cements has been undertaken and considerable data concerning the properties of the various grades being used, has already been obtained. In this connection the physical composition of milled asbestos, as revealed by mineralogical and microscopic examination, is also being studied. Information obtained in this way may throw further light on the relation between method of treatment and quality of fibre.

3. *Magnetic Iron in Asbestos.* The mode of occurrence and amount of magnetic iron in asbestos is being studied with the view of eliminating this impurity.

4. *Moulded Composition.* Patents have been obtained on a new method of moulding asbestos products whereby a wide range of physical properties can be obtained.

The specifications for a Standard Testing Machine as deveolped by the National Research Council and which had been approved last year by the Associate Committee on Asbestos Research, have now been accepted by the asbestos producers; these producers have agreed to bring all their old testing machines up to these specifications by July, 1934. Specifications for standard testing screens as recom-

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Canadian Spinning Fibre
Canadian Shingle Fibre
Cyprus Asbestos
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mended by the National Research Council have also been accepted by the producers.

The National Research Laboratories are making a study with the object of preparing special short grade fibres to be used as fillers for synthetic resins.

Asbestos Code Low Pressure Sub-Division

Immediately following the approval of amendments to the Asbestos Code authorizing establishment of Sub-Divisions, the Low Pressure Covering Sub-Division was organized and all known manufacturers of aircell were invited to join.

So far a majority of the manufacturers of aircell and woolfelt coverings has signed the Asbestos Code and are taking an active and gratifying interest in the affairs of the Low Pressure Sub-Division.

The Asbestos Industry is to be congratulated on the co-operation accorded by all its branches in connection with the Asbestos Code, and it is hoped that by the establishment of this Sub-Division for Low Pressure Manufacturers conditions in that portion of the Industry will be improved and that co-operation among its members will prove helpful.

Meetings of the Merchandising Committee have been held in New York and Chicago and a meeting of the Sub-Division proper is planned for an early date, this meeting to consider the report of the Merchandising Committee.

Anyone interested in becoming a member of this Low Pressure Sub-Division should get in touch promptly with the Asbestos Paper and Allied Products Division, Inquirer Building, Philadelphia, and receive full information as to procedure, costs, plans, etc.

Consumption of Asbestos In The United States

Among other figures which Report M. M. S. 272 from the U. S. Bureau of Mines published on April 20th, is a table showing consumption (or at least apparent consump-

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tion) of raw asbestos in the United States during the six years ending 1933.

These figures are arrived at by taking the production of asbestos in the United States, adding the imports and subtracting the exports, the result being the consumption for the years given, and we believe the figures arrived at in this manner are sufficiently accurate to be used for any practical purpose. The table[1] follows:

Year	Marketed Domestic Production	Imports	Exports	Apparent Consumption
	(All figures in short tons		*(2000 lbs.)*	
1928	2,239	230,595	850	231,984
1929	3,155	262,427	709	264,873
1930	4,242	208,681	771	212,152
1931	3,228	136,361	1,714	137,872
1932	3,559	96,754	1,707	98,606
1933	4,745	119,494	1,378	122,861

[1] The table given in M. M. S. 272 shows value as well as tonnage, but there are so many factors entering into the value figures that we decided not to publish them, altho anyone may obtain them by getting a copy of the report mentioned or by writing "ASBESTOS" direct for the figures.

Canada Reviews the Industry For 1932 and 1933

A four page (mimeographed) pamphlet on "Asbestos, 1933" has recently been issued by the Dominion Bureau of Statistics of Canada, Mining, Metallurgical and Chemical Branch, and this gives, among other things, tables showing Sales and Shipments of Canadian Asbestos 1932 and 1933; Production of Asbestos in Canada 1924 to 1933; Imports into Canada and Exports of Asbestos, 1932 and 1933; Principal Statistics of the Asbestos Mining Industry, Canada, 1932 and 1933; Fuel and Electricity used in the Asbestos Mining Industry in Canada, 1932 and 1933; Planned Development of Russian Asbestos Industry, 1932-1938; Monthly Production of Asbestos in Rhodesia, 1932 and 1933; Asbestos Production Union of South Africa, 1932 and 1933; Imports of Asbestos and Manufactures thereof into Japan, 1931-1933; Imports and Consumption of Asbestos, United Kingdom, 1931-1933; Imports of Unmanufactured Asbestos into the United States in 1933; and World Production of

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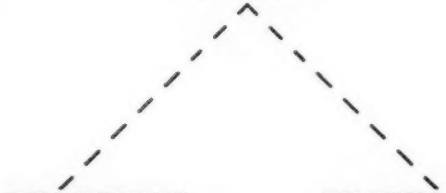

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Asbestos 1930-1932. Any of this information can be obtained by addressing "ASBESTOS," 16th Floor, Inquirer Bldg., Philadelphia.

World Consumption

A rather interesting tabulation has been received from "Tropag" Asbest-und Erzimport G. m. b. H., Germany, giving world consumption, by countries, for the years 1931, 1932 and 1933.

The contributor of these figures does not state from where taken, but we believe them to be fairly authentic.

CONSUMPTION	1931	1932	1933
U. S. A.	121.539	86.311	106.755
Canada	4.800[1]	5.000[1]	6.500[1]
Russia	40.000[1]	44.000[1]	48.000[1]
Japan	7.300	7.680	9.000
England	19.561	17.404	24.386
France	10.000[1]	6.000[1]	14.354
Belgium	12.609	5.190	11.239
Italy	5.134	3.791	5.000[1]
Spain	3.277	4.132	6.059
Portugal	58	60[1]	60[1]
Netherlands	266	157	522
Denmark	705	736	750[1]
Germany	9.808	7.581	12.613
Austria	5.018	3.466	1.267
Hungaria	2.394	1.597	781
Czecho Slovakia	4.878	7.044	2.208
Switzerland	1.145	563	832
Poland	321	342	529
Norway	1.000[1]	784	987
Sweden	968	1.193	1.200[1]
Denmark	705	736	750[1]
Estonia	63	21	32
Finland	62	42	68
Latvia	50	35	35[1]
Lithouania	80	11	50[1]
Jugoslavia	1.292	474	303
Rumania	65	65	65[1]
Australia	300[1]	400[1]	750[1]
India, Africa, South America and Other Countries	1.200[1]	1.100[1]	750[1]
Total—long tons	253.893	205.179	255.125
Total—short tons	279.282	225.697	280.638

[1] Estim.

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MARKET CONDITIONS

General Business.

"The Spring rise of business evidently passed its peak about the first of May, and the trend since has been moderately downward. It is usual for a decline in industrial activity to get under way in May, running until August, and the recession therefore is partly seasonal in character. However, it also reflects the passing of special influences which had helped to make the rise after the first of the year more pronounced than usual, and had caused production temporarily to run ahead of consumption in some industries." So reads the first paragraph of the National City June letter. Another comment on business conditions warns the business public to look for a downward trend in July and August and be prepared accordingly.

Asbestos. Raw Material.

Sales of asbestos crude and fibre during the first three months of this year, showed a marked improvement over 1933. This has been followed by a recession insofar as business emanating from the United States is concerned. In spite of uncertain conditions in the United States, prospects for good fall orders seem fairly bright. European business has shown definite indications of improvement. Fairly substantial shipments to foreign points have been made this season.

From South Africa we receive the following comment on the market situation in raw material: There appears to be a good demand for certain grades of blue asbestos but business is restricted owing to the holding back of supplies by the two chief producing companies. Among base minerals crocidolite (blue asbestos) is the most expensive to mine owing to the narrowness of the reefs and the often erratic way in which they run. To lower the price to any extent would simply mean that mining would be carried on at a loss.

Asbestos. Manufactured Products.

Textiles. There is very little change in this market.

Prices are holding about even, with no particular inquiries for volume.

Brake Lining. Improvement in automobile production naturally favorably affects the brake lining market, added to which the summer tourist season is just beginning The trek westward to the Chicago Fair while not expected to be as large as last year will no doubt have its effect on touring this summer with consequent increase in replacement sales of brake lining.

Insulation. High Pressure. Demand in this market is not quite as good in May and June as it was in January and February but runs ahead of last year. Prices are firm and better volume is anticipated depending of course on improvement in the construction industries.

Insulation. Low Pressure. Demand in this market is very moderate at the present time, this condition being due, generally speaking, to seasonal decline. Prices are said to be firm.

Paper and Millboard. Volume in the paper market is naturally light at this time of year and millboard also will probably show no definite improvement until late summer. Prices are fairly firm.

Asbestos Cement Products. Sales of asbestos cement shingles have been quite satisfactory during the past month, with practically no change in conditions as reported previously. The industry is running considerably ahead of last year's volume.

The above represent the opinions of men in the Industry closely in touch with the various markets. Comments from all sources are always welcome.

It is reported in the Japan Chronicle that a rich vein of asbestos has been discovered near Chientao by Mr. Asai, formerly of the Okura-Gumi. The mine is said to contain 200 000 tons of the mineral valued at 100,000,000 Yen. A further report is that Mr. Asai is being backed by the Okura Company and that a factory will be established in New Wiji. Can any of our readers give us further information on this discovery? We would particularly like to see specimens of the asbestos.

CONTRACTORS AND DISTRIBUTORS PAGE

WAGE RATES FOR ASBESTOS WORKERS

It has been some time since the rates of Asbestos Workers have been published in "ASBESTOS." Many changes have been made in the meantime, but the latest figures we have, (supplied by F. W. Dodge Corporation as of April 15th, 1934) are as follows:

Akron	1.00	New York City††	11.20
Atlanta	1.00	Oakland††	6.40
Baltimore	1.00	Oklahoma City††	8.00
Boston	1.25	Omaha	1.32
Buffalo	1.00	Philadelphia	1.00
Chicago	1.37½	Pittsburgh	*1.50
Cincinnati*	1.15	Portland, Ore.††	8.00
Cleveland*	1.17½	Reading	.70 / .80
Columbus	1.00	Rochester	.91
Dayton*	1.25	Richmond	.60 / .65
Denver††	9.00	San Antonio††	6.00 / 10.00
Des Moines	1.00	San Francisco	6.40
Detroit	1.37½	Seattle††	8.00
Duluth	1.00	Sioux City	1.00
Indianapolis	1.32½	St. Louis	1.25
Kansas City	.90	St. Paul	1.00
Los Angeles††	10.00	Washington, D. C.	*1.50
Louisville	1.12½	Wichita	.60
Memphis	1.00	Youngstown††	*1.00
Milwaukee	1.00		
Minneapolis	1.00		
New Haven*			
New Orleans	.65 / .80		

†† Rate per 8-hour day. *On 5-day week basis.

Note: Where two figures are shown they are the minimum and maximum. All figures are for hour rates except as indicated.

BUILDING

Contracts let during April for all classes of construction showed a decline of about 26 per cent from the March volume according to F. W. Dodge Corporation. The current total, however, was more than twice as large as the total shown for April, 1933. The April contract volume for the 37 eastern states amounted to $131,413,800 as against $178,345,800 for March and only $56,573,000 for April of last year.

For the elapsed months of 1934 construction awards totaled $592,939,600 as against $252,599,800 for the corresponding four months of 1933.

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THE A. C. N. A.

As will be seen from the photograph on page 23 the Hearing on the Insulation Contractors Code was held on March 28th. This Code has now one official signature attached, and it is fairly certain that General Johnson will sign the Code within the next ten days or two weeks, whereupon the Code will be officially in effect, since the President's signature is not required on Codes covering the smaller industries (less than 50,000).

Membership in the A. C. N. A. is increasing steadily. Those Insulation Contractors not yet members should get in touch with the Secretary, W. E. Ferguson, at the headquarters of the Asbestos Contractors National Association, 229 E. 37th Street, New York City.

Later: Special Bulletin has been received from W. E. Ferguson, Secretary, to the effect that Chapter 14, the Insulation Contractors Division of the Code of Fair Competition for the Construction Industry was signed by the Administrator on June 7th, 1934 and is effective ten days thereafter—June 17th. Copies of the Code will be mailed to each member of the Association as soon as available.

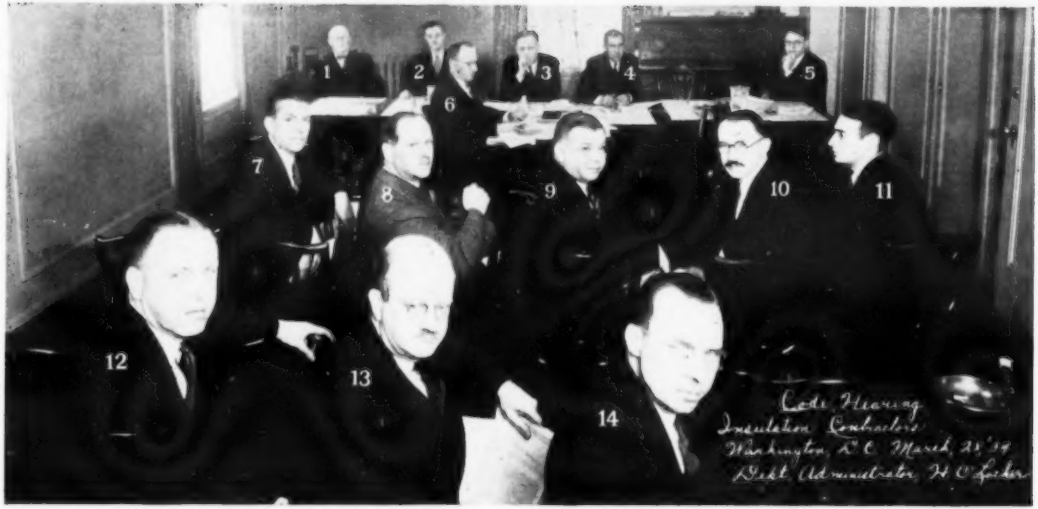
ASBESTOS STOCK QUOTATIONS

	Par.	Div.	Low	High	Last
Asbestos Corp. (Com.) New (V.T.)	np	–	9½	11	10½
Carey (Com.)	100	–	40	40	40
Carey (Pfd.)	100	6	61	61	61
Certainteed (Com.)	np	–	4¼	6⅜	5¼
Certainteed (Pfd.)	100	7	20	33	31
Garlock Packing (Com.)	np	–	16¼	16½	16½
Johns-Manville (Com.)	np	–	44	55½	49
Johns-Manville (Pfd.)	100	7	107¼	125	112
Raybestos-Manhattan (Com.)	np	60c	16¾	19½	18
Ruberoid (Com.)	np	1	32	32	32
Thermoid (Com.)	np	–	5	6	5⅜
Thermoid (Pfd.)	100	7	33	35	35

AUTOMOBILE PRODUCTION

Automobile production for April, 1934, in the United States and Canada totalled 378,983, compared with 188,968 in April, 1933, and with 350,193 in March, 1934.

Total production for the first four months of 1934 was 1,141,121 compared with 557,233 for the same period in 1933.



CODE HEARING — INSULATION CONTRACTORS

1. Jos. A. Mullaney — Labor Advisory Board
2. J. M. Hadley — Consumers' Advisory Board
3. Presiding — H. O. Locker, Asst. Deputy Administrator, N. R. A.
4. Geo. R. Roe — Industrial Advisory Board
5. R. D. Winstead — Planning & Research Div., N. R. A.
6. Reporter. 7. Name not known.
8. H. P. Rankin, President A. C. N. A.
9. W. L. Cremers, V. P., A. C. N. A.
10. W. E. Ferguson, Secretary, A. C. N. A.
11. Name not known.
12. Dr. Arthur L. Faubel, Secy. Cork Institute of America
13. H. H. Bruns—Cork Institute of America
14. L. K. Ross—Cork Institute of America.

ASBESTOS

Africa (Rhodesia).

(Statistics published by Rho. Chamber of Mines)

	March 1934 Tons (2000 lbs.)	Value
Bulawayo District		
Nil Desperandum (Afr. Asb. Mng. Co. Ltd.)	310.60	£ 3,882 10 ..
Shabanie (Rho. & Gen. Asb. Corp. Ltd.)	1,752.62	21,907 15 ..
Victoria District		
Gath's (Rho. & Gen. Asb. Corp. Ltd.)	479.85	5,998 2 6
	2,543.07	£31,788 7 6

Africa (Union of South).

(Statistics supplied by Dept. of Mines for the Union of S. A.)

	February 1933 Tons (2000 lbs.)	Value	February 1934 Tons (2000 lbs.)	Value
Transvaal				
Amosite	.....	...	183.80	£ 1,838
Chrysotile	287.50	£3,212	1,612.70	11,780
Cape				
Blue	257.23	4,523	395.23	8,475
	544.73	£7,735	2,191.73	£22,093

United States.

(Statistics published by U. S. Bureau of Mines, Mineral Statistics Division.)

1933 ..... 4,745 tons (2000 lbs.) valued at $130,677
1932 ..... 3,559 tons (2000 lbs.) valued at 105,292

The above is reported as being practically all of the chrysotile variety from Arizona and Vermont. Amphibole was mined in Maryland, Montana and Washington.

For comparison with other countries see page 29.

Canada.

(Statistics by Bureau of Mines, Province of Quebec).

	April 1933 Tons (2000 lbs.)	April 1934 Tons (2000 lbs.)
Fibre	8,168	10,611
By-Products	256	276

Vermont Asbestos Corporation

Producers of

Quality Asbestos Fibre

"Mined in the U. S. A."

Sales Office
60 East 42nd Street
New York, N. Y.

Shipping Point
Hyde Park
Vt.

Little Lessons in Selling

An Alternative Offer

By JOHN T. BARTLETT

You have labored hard with your prospect, answered this and that objection, presented your proposal in the most favorable light possible—and, nevertheless, you are losing the sale, and you know it. Is there anything you can do?

Yes, if you base your canvass on the psychology of the alternative offer.

This theory and system was first explained to the writer by a young salesman whose showing startled the entire organization. How did he do it? Nobody knew.

Investigation showed that the young "wizard" planned for every interview a double attack. He could use either approach and proposal—both were good—but he chose one, gave it his best and, many times, put it over.

As he was failing, however, he turned to his second proposal. This was suited to the situation, but represented a quite different line of argument. It was a matter of price, model, plan. Usually, it was something which would cost the prospect considerably less than the first purchase proposed.

The salesman would put himself, enthusiastically, with something like a "second wind", into the presentation of his alternative proposal.

The prospect, time after time, had been worn down in resistance to such a point by the first proposal that the salesman had comparatively little difficulty in putting over the second.

"Under the law of averages," the salesman declared, "I figure I have nearly double the chance to win with two offers than I have with one, and it works that way in practice."

This isn't an idea which is restricted in operation to any single line of goods. The versatile and intelligent salesman who will study it will find ways that he can adapt it to his own proposition. Put it to work—it will build your sales.

Imports Into U. S. A.

(Figures published by U. S. Dept. of Commerce).

Unmanufactured Asbestos.

	March 1933 Tons (2240 lbs.)	March 1934 Tons (2240 lbs.)
Africa (Br. S.)	304	388
Canada	3,909	9,222
Cyprus, Malta and Gozo	....	446
Germany	32	.....
Italy	153	.....
	4,398	10,056
Value	$144,927	$361,281

Tabulation by Grades:

Crude (B. S. Africa)	304	388
Crude (Canada)	21	56
Crude (Italy)	1	.....
Mill Fibre (Canada)	1,902	4,908
Lower Grades (Canada)	1,986	4,258
Lower Grades (Cyprus, etc.)	....	446
Lower Grades (Germany)	32	.....
Lower Grades (Italy)	152	.....
	4,398	10,056

Manufactured Asbestos Goods:

	March 1933 Value	March 1934 Value
Austria	$ 49	$ 213
Canada	15	160
Germany	620	776
Italy	....	445
United Kingdom	947	1,048
	$1,631	$2,642

Exports from U. S. A.

Exports of unmanufactured asbestos during the month of March 1934 amounted to 133 tons valued at $8,257; compared with 83 tons, valued at $3,749 during March 1933.

Exports of Manufactured Asbestos Goods:

	March 1933		March 1934	
	Pounds	Value	Pounds	Value
Paper, Mlbd. & Rlbd.	82,147	$ 5,395	124,201	$ 9,772
Pipe Covering and Cement	150,306	7,115	632,345	10,526
Textiles and Packing	51,363	30,325	94,822	47,466
Brake Lining—				
Molded and Semi-molded		42,753		49,252
Not molded	93,637[1]	21,624	145,078[1]	23,831
Magnesia and Mfrs. of	45,236	4,545	76,325	7,404
Asbestos Roofing	10,728[2]	18,038	5,313[2]	9,003
Other Manufactures	201,336	9,790	110,304	10,185

[1]Lin. Ft. [2]Sqs.

Imports and Exports by England.

Imports of Raw Material.

	April 1933		April 1934	
	Tons (2240 lbs.)	Value	Tons (2240 lbs.)	Value
From Africa (Rhodesia)	933	£17,555	883	£17,350
From Africa (Union of South)	288	3,280	858	9,388
From Australia			6	143
From Canada	224	1,903	73	824
From Cyprus			195	3,318
From Italy			15	91
From Soviet Union (Russia)	121	2,033		2
From Switzerland				6
From U. S. of America	9	749	9	131
	1,575	£25,520	2,039	£31,253

Exports of Manufactured Asbestos Goods:

	April 1933		April 1934	
	Cwts.	Value	Cwts.	Value
To Irish Free State	2,187	£ 1,431	6,939	£ 4,255
British India	2,866	7,239	6,092	8,136
Australia	533	4,110	660	4,726
Other British Countries	5,257	10,249	7,068	15,582
Netherlands	569	2,447	712	2,550
Belgium	526	3,531	615	2,760
France	70	1,211	718	2,801
Italy	277	3,246	508	5,473
Other Foreign Countries	4,141	21,275	9,156	29,399
	16,426	£54,739	32,468	£76,082

Exports of Raw Asbestos from Canada.

(Figures by Dominion Bureau of Statistics).

	April 1933		April 1934	
	Tons (2000 lbs.)	Value	Tons (2000 lbs.)	Value
United Kingdom	125	$ 4,285	.....	.....
United States	930	58,438	2,772	$126,927
Belgium	20	2,000	....	.....
Columbia	2	187	....	.....
France	..	10	80	2,999
Germany	129	6,679	70	4,800
Italy	134	8,903	....	.....
Japan	699	51,126	1,582	57,645
Netherlands	1	51	152	5,320
Spain	45	2,184	....	.....
Uruguay	....	.....	18	1,042
	2,085	$133,863	4,674	$198,733
Sand and Waste—				
United Kingdom	300	6,000	31	726
United States	2,550	34,461	4,468	59,643
France	....	.....	30	660
Germany	30	600	33	726
Italy	30	275	....	.....
Netherlands	....	.....	44	928
	2,910	$41,336	4,606	$62,683
	4,995	$175,199	9,280	$261,416

Production of Asbestos Compared

	1932 Tons (2000 lbs.)	1933 Tons (2000 lbs.)
Canada	**122,977**	**158,367**
Cyprus	**1,700**	**3,904**
Rhodesia	**15,766**	**30,181**
Union of South Africa	**12,070**	**15,877**
United States of America	**3,559**	**4,745**
Consumption in United States	**98,606**	**122,861**

Asbestos Simplifies Sand-Steaming

By F. R. Cozzens

In the oil fields of Ohio, West Virginia and Kentucky, asbestos is being used one thousand feet underground to conserve heat and power in steaming oil sands.

Wells thruout this territory were drilled forty years ago, and in many instances continuous pumping has gummed the sand with paraffin until oil can no longer be forced thru. To maintain production it is necessary to eliminate the paraffin, and this is generally accomplished by pushing steam to the oil sands under pressure. But herein lies a problem! Steam, forced down thru a thousand feet of cold casing condenses rapidly, and fresh water thus created is very detrimental to oil-bearing rock. Decreasing the diameter of the casing by using small pipe eliminates excess water, but special compression equipment is required, making the cost prohibitive to the average operator. The introduction of asbestos changed this picture radically, and armed with a few rolls of insulation, the small lease-owner now steams his wells as economically as the largest operator.

The modern method of applying steam to oil-rock consists of running a "liner" or small string of inside casing about four inches in diameter. Each joint of this liner is wrapped before being run, with asbestos paper, the wrapper extending upward at least three hundred feet from the top of sand. A steam-pipe, also wrapped with the same material is connected to the top of liner, and thus protected, an ordinary 20 h. p. boiler is quite sufficient to force steam to the deepest sand. Excess moisture is eliminated. Risk of spoiling the well is greatly lessened, and steaming cost is reduced fully one-third.

The depth of a well and the size of equipment used determines the amount of asbestos wrapper, and some operators prefer wrapping the entire liner from top to bottom. In oil-wells, exceeding one thousand feet in depth, a packer, also wrapped in asbestos is placed just on top of sand to be steamed. In shallow wells (500 feet or less) an ordinary steamline, wrapped in asbestos, is run down the casing;

direct from the boiler to the stand. Wells producing even a small quantity of gas are especially favorable to asbestos protection, since it lessens the danger of fire from heated pipes.

Modern operators are generally agreed on the fact that asbestos, especially in wrapper-form has done more to lessen the cost of steaming oil-wells than any other agent. The material can be cut and handled in divers ways to suit special requirements. It can be conveyed into any location and does its work equally well at all seasons.

Asbestos Curtains to Conquer Ship Fires

By A. C. BLACKALL

How serious fires on board ship—such as that which probably destroyed the mammoth French liner L'Atlantique early last year—might be prevented with the aid of suitable asbestos protection was the subject of a demonstration at Slough, near London, recently.

Highly inflammable materials in a tunnel representing a corridor on the passenger deck of a modern line were set on fire. The heat thus generated set an alarm clock in action, and asbestos curtains immediately isolated the flames from all other parts of the "vessel."

A fireman wearing an asbestos uniform then entered the burning compartment, walked thru the flames, and extinguished the conflagration.

An official of Bestobel Works, Slough, where the asbestos curtains are manufactured, stated that a similar demonstration had recently been given before representatives of important British shipping interests, who were highly impressed by it. Similar success with actual demonstrations aboard ship is likely to lead to the widespread adoption of this protective system.

The Sumner, Wash., News is responsible for the statement that the Eskimos of Labrador in ancient times used asbestos for lamp wicks. Does anyone have any basis of fact for such a statement? If so we would like to have it.

NEWS OF THE INDUSTRY

Birthdays. During the next thirty days the following gentlemen will celebrate the occasion of their birthdays; J. C. V. Wildman, Sales Agent, British Belting & Asbestos Co., London, England, whose birthday falls on June 15th; Royal Mattison, Vice President, Keasbey & Mattison Co., Ambler, Pa., June 21st; Chester A. Middleton, Managing-Director, Johns-Manville Corp., of Brazil, Sao Paulo, Brazil, June 27th; L. B. Palmer-Ball, President, Palmer Asbestos & Rubber Co., Chicago, Ill., June 29th; George L. Hammons, President, United States Asbestos Co.of Illinois, Chicago, Ill., July 4th; O. J. Garlock, President, Crandall Packing Co., Palmyra, N. Y., July 5th; Charles S. Wood, President, Charles S. Wood & Co., Newark, N. J., July 6th; A. M. Ehret, Jr., President, Ehret Magnesia Mfg. Co., Valley Forge, Pa., July 11th; to all of which gentlemen we extend best wishes and congratulations.

Raybestos-Manhattan, Inc. Earned Net Income of $292,973.34 during the quarter ended March 31, 1934, equivalent to 46c per share, comparing with a net loss of $63,428.51 during the same period in the year prior.

The Balance Sheet at March 31, 1934 revealed total assets amounting to $16,308,099.68, including $7,755,895.28 of Current Assets equivalent to nine times the Current Liabilities of $830,599.81 at the close of the quarter.

The Company had no banking or funded debt, or other capital obligations. The book value of its 642,900 shares of stock outstanding, after deducting the 33,112 shares held in the treasury, was $22.90 per share. The Net Current Assets represented $10.77 per share, of which Cash and Marketable Securities amounted to $3.90 per share.

The Directors declared a dividend of 25c per share, payable June 15, 1934, to stockholders of record at the close of business May 31, 1934.

James Hardie & Co., Ltd., Sydney, Australia. It is reported that this firm has decided to make an immediate start with the erection of works at Newsstead, Brisbane, for the manufacture of Fibrolite Asbestos Cement products. This will practically complete the Company's chain of works thruout Australia, factories already being in operation at Sydney, Melbourne and Perth. The industry should prove a valuable acquisition to the northern state, as constant employment will be provided for a number of men and large quantities of Queensland portland cement will be used in the manufacture of the Company's products.

Vermont Asbestos Corporation. Timothy E. Byrnes, president of Vermont Asbestos Corporation returned from his win-

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The "CAPE" quality of blue crocidolite, owing to great tensile strength, volume, and acid-resisting properties, has been proved to be the world's finest material for:-

(1) High Temperature Insulation
(2) Bulkheads and Fireproof Partitions
(3) Asbestos Cement Pipes
(4) Textiles
(5) Electrode Wrappings for Arc Welding

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owing to its great length of fibre, is ideal both in economy and efficiency as a constituent for:-

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100% AMOSITE SECTIONAL PIPE COVERINGS

AND BOILER CASINGS FOR BOTH MARINE AND POWER PLANT INSTALLATIONS

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The Cape Asbestos Co Limited

Morley House 26-30 Holborn Viaduct London E.C.1

Factory, Barking, Essex

ter's stay in St. Petersburg, Fla., on May 1st and has gone to his home in Hyde Park, Vt.

K. H. Behre, Sales Manager reports a very gratifying increase in sales, necessitating re-opening the plant, after the winter shutdown, on April 1st. Since May 1st they have been operating on a two shift basis and plan to continue operation on that schedule for some time to come.

John R. Livezey of Philadelphia and Baltimore has opened an office located in the Builders' Exchange, Richmond, Va., in charge of W. M. White. This organization is the approved contractor for the Keasbey & Mattison Company and this Richmond Office will enable them to give better service to the trade in the Virginia territory.

Asbestos Corporation Limited, Thetford Mines, P. Q., Canada, has just issued a most attractive catalog describing their Asbestos Fibres and giving numerous illustrations of their mines and mills. Outstanding features of the catalog are two charts, one showing the genealogy of the Company (see page 19 of May 1934 "ASBESTOS") the other a map of the holdings of the companies giving locations of mills, etc. We are very glad to have this addition to our library on asbestos advertising literature.

TRADE MARKS

This information is supplied by the National Trade Mark Co., Munsey Bldg., Washington, D. C., who will conduct free of charge an advance search on any trade mark our readers may contemplate adopting.

Plant, and representation of a cross within concentric circles. Serial No. 312,238. Plant Rubber & Asbestos Works, San Francisco, Calif. For packings, made of asbestos, rubber, flax, jute cotton, and semi-metallic compositions. Passed on March 13th.

Caposite. Serial No. 334,632. The Cape Asbestos Co., Limited, London, England. For sectional coverings, slabs and mouldings composed wholly or mainly of asbestos or mica or slag wool, all being construction materials for boilers, pipes, joints, buildings, and the like, for heat and sound insulating purposes. Passed on April 10th.

PATENTS

Pipe Wrapping Tester. No. 1,950,484. Granted on March 13th to George W. Clarvoe, Somerville, N. J., assignor to Johns-Manville Corporation. Application May 7th, 1932. Serial No. 609,819. Description upon request.

Fibrous Coating to a Filament or Wire, Process of. No. 1,950,988. Granted on March 13th to Benjamin Weber, Luttenberger, Manheim, Pa. Assignor to Raybestos-Manhattan, Inc., Passaic, N. J. Application July 2nd, 1930. Serial No. 465,363.

Described as the combination with means for continuously feeding a filament, and means of delivering fibres into juxtaposition thereto, of means for continuously winding the fibres around portions of the filament having surface portions for en-

gaging the fibres moving at a speed increasingly in the direction of movement of the filament.

Magnesia Chloride, Manufacture of. No. 1,951,160. Granted on March 13th, to Robert Burns MacMullin, Niagara Falls, N. Y., assignor to Mathieson Alkali Works, Inc., New York City. Application May 16, 1932. Serial No. 611,575.

Described as in the production of magnesium chloride from calcium chloride and magnesium carbonate, the improvement which comprises subjecting active magnesium carbonate to the action of hydrated calcium sulphate in the presence of water and carbon dioxide and subjecting calcium chloride to the amount of the resulting solution of magnesium sulphate after separation of calcium carbonate therefrom.

Insulating Element for Electrolytic Cells. No. 1,951,814. Granted on March 20th to Friedrich Wells, Munich, Germany, assignor to Lawaczeck Gesellschaft mit besshrankter Haftung in Liquidation, Berlin, Germany. Application August 13, 1930. Serial No. 475,115. And in Germany July 19, 1929.

Described as in an electrolytic cell, electrical insulating parts constructed of a substance selected from the class consisting of ethyl and bezzyl cellulose ethers, admixed with a mineral filler selected from the class consisting of asbestos wool, asbestos meal and ground shale, which insulated parts are resistant to hot concentrated alkali and possess high strength.

Friction Material. No. 1,952,114. Granted on March 27th to Claude T. Begg, Bridgeport, Conn., assignor to Raybestos-Manhattan, Inc., Bridgeport, Conn. Application October 19, 1931. Serial No. 569,857.

Described as a flexible unitary friction element having a plurality of friction surfaces on its opposite faces each surface having a different pre-determined co-efficient of friction, whereby either of said faces may be used as a friction surface.

Liquid Saturating or Coating Material. No. 1,952,725. Granted on March 27th, to Izador J. Novak, Bridgeport, Conn., Assignor to Raybestos-Manhattan, Inc., of Bridgeport. Application September 16, 1931. Serial No. 563,219.

Described as a smooth mixture consisting of fluid cresylic acid aldehyde condensation product containing 3 to 5% combined nitrogen, said product being soluble in fatty oils and capable of transformation by heat to an infusible state, and Chinawood oil, said mixture being transformable by heat into an infusible body.

Wick for Oil Burners. No. 1,954,855. Granted on April 17th to Jesse M. Weaver, Charleston, S. C., assignor to Raybestos-Manhattan, Inc., Bridgeport, Conn. Application November 14, 1932. Serial No. 642,536.

Described as a woven wick for oil burners which comprises a plurality of asbestos strands having wire cores, said wick having a warp strand of combustible material at one edge thereof which, when burned, exposes spaced protruding weft strands at said edge.

THIS AND THAT

One of the papers to be presented at the Semi-Annual Meeting of the American Society of Heating & Ventilating Engineers is "Insulating Value of Bright Metallic Surfaces" by Prof. F. B. Rowley.

The meeting will be held at The Inn, Buck Hill Falls, (in the Poconos) Pa., June 19th to 22nd, 1934.

And now they call it "esbestos!" A news clipping states "Esbestos and mica are unusual minerals in that they can be bent without breaking."

We don't know who wrote the hodge podge of facts concerning asbestos, which has been appearing in various newspapers thruout the country, but—well judge it for yourself:

"When the earth's crust first hardened into rock, millions and millions of years ago, some of the veins in the rock were filled with a stuff called serpentine. It is this serpentine which is the mother of asbestos. Mined from rock in Georgia and Canada, serpentine is ground up into soft white pulpy stuff which is very light and quite tough, The pulp is then broken up, cleaned and carded like wool for weaving into cloth. Ordinarily, fine wires are woven into the cloth with the threads of asbestos, which, being rock crystal, would otherwise be too brittle to be durable."

This is really one of the most remarkable descriptions of asbestos which we have ever read!

The address of the South African Mining & Engineering Journal has been changed, as of June 1st, 1934 to 8-14 Essex Buildings (1st Floor), Corner Simmonds and Marshall Streets, Johannesburg, South Africa. "ASBESTOS" receives the South African Mining & Engineering Journal regularly, and will be glad to lend a copy to anyone desiring to examine it.

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The world has millions of starters, but only a few finishers. Only a handful who can be depended upon to produce a result. And it is only the result that counts, in school or in business or professional or social life.

Selected.